DOCUMENT RESUME

ED 377 686 FL 022 643

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TITLE English as a Foreign Language and the Dyslexic College Student: Pilot Screening Test and Remedial Materials in the Language Laboratory.
PUB DATE [94]
NOTE 31p.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Students; *Dyslexia; *English (Second Language); Foreign Countries; Higher Education; Instructional Materials; *Language Laboratories; Material Development; *Remedial Reading; *Screening Tests; Second Language Instruction
IDENTIFIERS *Haifa University (Israel); Israel

ABSTRACT

A study at Haifa University (Israel) investigated the feasibility of a diagnostic test for dyslexia at the college level, among students studying English as a Second Language (ESL). This process and the development of remedial ESL reading materials for this population, to be used in the language laboratory as a supplement to regular ESL courses, are described. First, dyslexia is defined and discussed and common reading errors are identified. Then the development and testing of a screening and diagnostic test for dyslexia is reported. The pilot test consisted of 96 English words for reading into a microphone, 12 Hebrew place names to be written in English, and four questions on student perceptions of their own reading problems and strategies. Students' taped and written responses were analyzed by multiple examiners. Results suggest the test is useful for screening students for further testing and diagnosis. Development of the language laboratory instructional materials and the resulting nine-lesson module are described briefly. It is noted that due to positive student response, materials development continues for other instructional levels. The screening test, a reading comprehension test and answer key, and an outline of the instructional materials are appended. Contains 15 references. (MSE)

English as a Foreign Language and the Dyslexic College Student: Pilot Screening Test and Remedial Materials in the Language Laboratory

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I. Dyslexic Students Studying English as a Foreign Language (EFL)

During the past few years, there has been an increased awareness of the special needs of students suffering from developmental dyslexia. The Israeli Ministry of Education has allowed students classified as dyslexic by selected diagnostic institutions to benefit from extra time during exams and special consideration in the curriculum. Students' handicaps are also taken into account during the psychometric university entrance examinations by the National Institute for Testing and Evaluation (NITE). Some testing situations allow the student to listen to the text on tape and/or to speak the answer into the tape. As a result, more and more handicapped students have found their way to the university.

Estimates of dyslexia in the general population run between 2% and 10%. Since the highest 25% of the general population attend university, we may calculate that out of a freshman year of 1000 students, between 5 and 25 students would be dyslexic, needing special help to study at college.

The native language of most students at Haifa University is Hebrew, with native speakers of Arabic constituting 20% of the student population, and other native languages including Russian, Amharic, French, and others. The Department of Foreign Languages offers courses in reading comprehension of texts in English and other languages to enable students to deal with bibliographical materials needed for regular course work. Whereas English is compulsory, other languages may also be required by different departments (eg, Arabic and Turkish for students of The History of the Middle East, Russian for students of History, French and Italian for students of Art, etc.).

Purpose

Although diagnostic tests exist for dyslexic children whose native language is English, to date, we know of no valid normative diagnostic test of reading in English as a foreign language (EFL). One purpose of this study is to determine whether it is possible to design a diagnostic tool in reading able differentiate, quantitatively or qualitatively, or both, between certified dyslexic students and others.

Another purpose of this paper is to outline the development of a remedial materials for dyslexics used in the Haifa University language laboratory to supplement the regular EFL courses.

II. Review of the Literature

A. Defining and Classifying Dyslexia

Although researchers disagree about both the etiology of developmental dyslexia and valid diagnostic means to identify it, there is wide consensus linking reading difficulties with primary neural deficits. These deficits impede the development of functional neural networks related to information processing in reading.

The definition of specific developmental dyslexia accepted by the World Federation of Neurology reflects both the ambiguity and the consensus:

> a disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence, and socio-cultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin (Critchley, 1970 in Stark et al., 1991).

A working definition is expanded by Stark et al. (1991) to include the following criteria, all of which must be met to allow a diagnosis of dyslexia:

1. Reading ability in the first language at least two years below age norms if over 10 years old (less of a discrepancy is permitted for younger children)
2. Normal intelligence
3. Normal vision and hearing, allowing success in school
4. No gross neurological deficits
5. No primary emotional disturbance
6. Adequate educational opportunity
7. Originally good motivation
8. Adequate socio-economic and cultural environment" (p. 225)

The operational definition presents rules of sampling the relevant developmental dyslexic population for the purposes of research. This definition assumes that that developmental dyslexia is likely to be found in individuals fitting these sampling criteria. In this population, reading difficulties are manifested which cannot be explained by factors ordinarily predicting failure in school (eg., low intelligence disadvantaged socio-economic background, emotional disturbance, etc.). The source of the reading impairment in these cases may therefore be said to have a primary biological basis. Although it is possible to argue

against this position, there is empirical evidence to support it.

Researchers also disagree about the homogeneity of the factors impeding reading acquisition in this population (Kinsbourne, 1986; Rayner, 1986; and Smith et al., 1986; Lamm and Epstein, 1993). If the failure factors were homogeneous, reading in a foreign language would probably manifest similar kinds of difficulties for all dyslexics. Empirical evidence suggests, however, that dyslexics have different kinds of difficulties.

One of the initial means of classifying dyslexics is type of reading error. Most research deals with errors of native speakers which, however, cannot automatically be transferred to foreign language learners. We have no normative tests for reading English as a foreign language, and reading achievement tests for native English speaking children would not be relevant to the older foreign learners. Moreover, word frequency lists, which form the basis of reading syllabi and tests, would not necessarily be relevant for our student population.

Little research has been carried out on dyslexics learning to read in a second or foreign language. It is reasonable to expect that dyslexics, who have difficulty reading in their native language, will find reading in a second or foreign language even more frustrating. According to most theories of dyslexia (phonetic awareness, lexical processing, visual-perceptual -- eye-movement and magno-cellular), the direction of scanning for dyslexics tends to be from right to left, indirectly benefitting native speakers of Hebrew and Arabic. During the teaching of either English (left to right scanning) or Arabic (right to left scanning) to native speakers of Hebrew, our own empirical evidence points to the sheer difficulty of learning another language no matter what the direction.

Dyslexics have been categorized into two groups: auditory-linguistic and visual-spatial (Pirozzolo and Rayner, 1988). The former are four times as frequent as the latter.

auditory-linguistic dyslexia:

- average to above average performance IQ
- low verbal IQ (relative to performance IQ)
- developmentally delayed language onset
- expressive speech defects
- anomia, object naming, or color-naming defects
- agrammatism
- reading errors mainly involving the phonological aspects of language
- spelling errors characteristic of poor phoneme to grapheme correspondence
- letter by letter decoding strategy
- normal eye movements
- relatively intact visual-spatial abilities

visual-spatial dyslexia:
- average to above average performance IQ
- low performance IQ (relative to verbal IQ)
- right-left disorientation
- early evidence of preference for mirror or inverted writing
- finger agnosia
- spatial dysgraphic (poor handwriting, poor use of space)
- reading errors involving visual aspects of text
- spelling errors characteristic of letter and word reversals, omissions, etc.
- use of phonetic decoding strategy
- faulty eye movements during reading
- oral language abilities relatively normal (p. 70)

A similar classification is made by Bakker and Licht (1986): P- (perceptual) and L-(linguistic) type dyslexics are identified as originating from the right and left hemispheres, respectively. Whereas the reading strategies of P-type dyslexics are described as accurate but slow, those of L-type dyslexics are seen as inaccurate but quick.

Comparing distributions of reading strategies in native English speaking dyslexic and normal readers, Elbro (1991) found both groups spread over a continuum between letter-level and whole-word level decoding. More than half the dyslexics tended toward the whole-word based strategy whereas none of the normal readers did. Normal readers showed a tendency toward letter-level recoding. This finding indicates dyslexic phonological processing impairment, according to Elbro. Termed as "auditorily" impaired, these dyslexic readers appeared to compensate for poor phonological skills by relying an whole-word reading. The tendency of those dyslexic readers manifesting letter-level recoding was explained in terms of verbal modality and awareness of morphemes.

The issue of the persistence of dyslexia in adults is tackled by Miles (1986). The sample population consisted of 223 native English speakers between the ages of 17 and 26, all of whom were free from gross physical handicaps and qualified for college or university (p. 150). Even after considerable practice, dyslexia does not disappear. It is manifested either by a larger number of errors or slower reading speed than for normal readers.

Exploring the genetic factor in dyslexia, Smith et al. (1986) examined families of dyslexics aging from 7 to 69, with a mean of 28.50. Again, age was not related to any particular type of dyslexic behavior.

B. Reading Errors

One of the basic tools used in diagnosing dyslexia is the profile of reading errors. Four classes of Hebrew reading errors are identified by Lamm and Epstein:

1. pure vowel errors

2. visual errors
3. consonant errors (incorrect pronunciation because of:
   a. phonological resemblance (voicing) -- g/k
   b. inability to match the appropriate sound to its orthographic symbol
4. grammatical-morphological errors (ie, distorting or replacing of grammatical inflection attached to the word root)

In addition, they identify three classes of spelling errors:
1. homophone confusions
2. visuo-spatial writing errors
3. pure consonant and word segmentation errors

One of the few studies of bilingual dyslexia was carried out by Matejcek and Sturma (1986). They found the reading errors of Czech and American children to be practically identical (p. 207).

The kinds of reading errors made by dyslexics may vary depending on the cause. Without giving technical explanations, we can describe these misreadings in general terms. Some dyslexics appear not to recognize words as wholes, but resort to a strategy of sounding out the words. Others read whole words but appear not to be able to decode letters. They may have difficulty reading irregular or nonsense words. Errors include nonwords (for example, reading "island" as "izlai d" or "sugar" as "sudger"), or different but similar-sounding words (for example reading "disease" as "decease" or "guest" as "just," "signal" as "single"). In both cases the errors can be described as phonic approximations, in which the pronunciation is based on treating the target word as if it were an alphabetically transparent one.

The problem of having difficulty with phonetic segmentation or sight-sound correspondence appears to be frequent among dyslexics, according to Shaywitz, 1992:

> Most investigators now suspect that dyslexic children read poorly because of a highly specific linguistic problem sometimes called "phonological unawareness." They cannot easily learn to read because they have extraordinary trouble associating printed letters with the sounds of speech." (p. 19)

Paula Tallal from Rutgers University has shown that dyslexic students often cannot hear the difference between speech sounds such as "bah" and "dah" (Shaywitz, 1992).

Some dyslexics also make visual errors, such as misreading "precise" as "precious" or "foreign" as "forgiven." Other dyslexics confuse specific referents and their superordinates. For example, "ape" is read as "monkey," "forest" as "trees,"

III. The Present Study

A. Sample Population

At the end of the academic year in June 1992, approximately 20 students reported to their English teachers with letters from various educational institutions attesting to their dyslexia. By June 1993, there were 30. Consequently, we have set up a committee to study the problem of students who have difficulty in reading English as a foreign language, to design an initial screening test for dyslexic students, to construct a remedial program of mini-lessons in the language laboratory, and to make recommendations for the future.

B. Preliminary Screening Test

1. Pilot Version of Screening Test

Since we have no screening tests for adult nonnative speakers of English, we set out to arrive at one empirically. This is meant to give a rough indication as to whether the learners are normal readers (even if weak) or whether further testing by a qualified diagnostician of dyslexia would be required. We based our test on word lists. Ordinary native frequency lists would not be applicable because we could not assume that our adult students would be exposed to the same words as children with English as a first language. We therefore improvised, making assumptions about our own student population in our choice of words.

The pilot version of the screening test consisted of three sections: a vocabulary section containing 96 English words (separated into 14 groups according to length for easier viewing) for students to read into the microphone, a list of 12 Hebrew place names to be written in English by the students, and four questions on how students perceive their own reading problems and solutions (to be answered in the language of the student's choice).

Since most data indicate that for most dyslexics the source of difficulty is linked to low phonemic awareness, we decided to test the students' ability to internalize:

1) regular phonemic sound-symbol relations
and 2) more complex links between phonemic representations existing in Hebrew but not in English

What is missing are sounds (vowels and diphthongs) or phoneme representations existing in English but not in Hebrew which most Israeli students would have difficulty differentiating (eg, ship vs. sheep, run vs. ran, loud vs. laud).

Words on the list were chosen according to the following criteria:

1) representative regular words

2) words with difficult vowel sounds or consonant clusters

3) representative irregular words

4) words unfamiliar to this student population
(as indicated on the pretest)

5) nonsense words

These words were selected to diagnose different reading problems: difficulty in applying regular rules to new words, difficulty in reading irregular words, and difficulty in discriminating between real words and nonwords. It was hoped that the kinds of errors made by dyslexics would differ qualitatively as well as quantitatively from those made by non-dyslexics. Words that were answered similarly by both groups would be discarded from the list.

Words appeared in the order of length, from the shortest three-letter words to the longest word of five syllables.

We wished to test students' ability to arrive at phonological approximations. Since the Hebrew alphabet is different from the Latin alphabet, we gave the familiar place names in Hebrew and asked students to transcribe them in English. Place names were chosen according to the difficult vowel sounds or consonant clusters (e.g., "Ra'anana" would be considered difficult but not "Tel Aviv").

Type fonts were chosen for maximum clarity and enlarged.

In addition to these objective criteria, we wanted input from the students themselves on how they perceived their reading difficulties and the help they were getting as part of the course they were taking at the time. We wanted to determine whether students' perceptions of their reading difficulties could be linked to possible solutions. We also wished to determine whether the perceived needs of the normal students differed from those of the dyslexic students. We thought it might be possible for the students to guide us in designing remedial materials.

2. Administration of Pilot Test

The pilot screening test was administered to 72 students studying in the Summer Session of the Advanced 1 English course at Haifa University on August 16, 1992. These students have studied English seven to eight years in school. They can read basic academic texts slowly and need another semester to increase fluency and comprehension skills. Most are native speakers of either Hebrew or Arabic.

There were three classes, one of which was taught by a researcher of the present study. Students entered the Language Laboratory in four shifts -- two in the morning and

two in the afternoon. Two of the students had already shown their teachers certificates of dyslexia from a recognized dyslexia clinic.

The students were instructed in Hebrew and English concerning the purpose and technical aspects of answering the questions. One of the researchers explained that this screening test was an attempt by the department to discover problematic areas in reading and to develop remedial exercises or approaches to these problems as part of the course. Grades would not be held against them. Feedback was promised the following week.

It was assumed that the pilot version could be shortened for efficiency.

3. Grading

Students' tapes were listened to by four examiners/researchers. Errors in pronunciation were recorded. The transcriptions of the Hebrew list into English were graded by another examiner/teacher. Students' reactions to reading and their solutions were also recorded.

4. Results

a. ENGLISH VOCABULARY

Out of a total possible score of 96, the mean was 74.5 (SD=9.78). A total of 69 tapes were heard, 3 recordings having been accidentally erased. The median number of errors per student was 20 out of 96 words. The range of errors was 0 to 46. The highest score of 96 was received by only one student. Time ranged from 2 minutes to 15 minutes, with a mean of 5 minutes (SD=2.55). Some students forgot to indicate the time. There were no significant correlations between time and score. Rather, the time students took to read the word lists depended on external or internal factors such as careful attention to detail, worry over making mistakes, rush to get back to class, etc. (During the pretest, students asked questions about procedure, whether the grade would count, whether they were missing anything by taking longer on some tasks while their classmates had already finished and had returned to class.)

Words mispronounced by more than 13 students (19%) were considered difficult. These included irregular consonant clusters (eg., dessert, echo, ache), silent vowels or consonants (eg, island, debt, straight), diphthongs (eg, liar, ambiguity), nonsense words (eg, sid, tabe, plean, ceading). Words mispronounced by very few students (0 to 4 students or 6%) were considered easy. Some of these included words similar in Hebrew and English (melon, lemon, banana). Others were words frequently encountered in the English curriculum at school (eg, school, people, friend, enough). Another category that was removed were words, though incorrectly pronounced by several normal students, that were

correctly pronounced by the dyslexic students (eg, dark, rail, sign).

The following words were removed from the pilot version:

too difficult:	sid	tesh
	ape	plean
	ache	union
	pine	island
	quib	praler
	evil	dessert
	liar	ceading
	debt	straight
	echo	precious
	tabe	ambiguity
too easy:	was	clamb
	self	school
	rail	people
	edge	enough
	dark	friend
	radio	temporil
	melon	beautiful
	lemon	melon
		banana

b. ENGLISH TRANSLITERATIONS FROM HEBREW

Out of a total possible score of 12, students scored between 3 and 12, with the mean of 10.4 (SD=1.93). The score of 12 was received by 27 students (37%). The time range for this section was 1-14 minutes, with a mean of 4.2 minutes (SD=2.22).

Students usually made errors in vowels and consonant clusters. All the Hebrew words were misspelled by at least four students. It was decided to remove the most badly misspelled name, Ma'ale Hachamisha, and the two easiest names, Benyamina and Kfar Vradim, from the revised test. One student, however, showing the symptom of a deep dyslexic, wrote Tiberias instead of Kinneret.

c. VIEWS ON READING PROBLEMS AND SOLUTIONS

These views were expressed by all the students. Responses by the two dyslexic students are marked by an asterisk (*). The responses were written in Hebrew, English, or Arabic.

1) What are your difficulties in reading?

response	frequency
vocabulary	15
slow speed	12 + 1*
long words	11
pronunciation	8
understand, comprehension	6
concentration	3
read word wrongly and misunderstand	2
words derived from French and English	1
translate while reading	1
how to link words together (Arabic)	1
letters get turned around	1*
tiring	1*

2) Do you have any specific problems in reading English?

response	frequency
vocabulary, long words	12
slow speed	7
pronunciation, accent	7
understand, comprehension	5
concentrate on long text (3 pages)	2
read word wrongly and misunderstand	2
don't notice all letters and words	2
reading aloud	1*
translate names from Hebrew	1
how to link words together (Arabic)	1
grammar	1
reading a foreign language difficult	1*

3) How have you helped yourself?

response	frequency
read books and newspapers	26 + 1*
dictionary	7
read aloud	4 + 1*
vocabulary work	4
discussion in English	3
notice rules of pronunciation	3
took this summer course	3
translate	3
I didn't	2
learn prefixes and suffixes	2
listen to TV and radio, songs	2
connect sentences before and after particular sentence in text	2
took speed reading course	1
homework	1
speak English with natives	1
during exams the material is read to	

me, I'm given extra time, and I can answer orally	1*

4) How would you like us to help you?

response	frequency
vocabulary	10
teaching methods, reading techniques	6
practice	6
discussion in English	5
tapes and books	4
teacher reads aloud and explains	4
multiple-choice question practice	4
pronunciation	3
read in class	3
correct errors	3
read long articles for comprehension	3
Make the course easier, easier texts	3
exams: oral, time extension	3
good material giving rules and examples	2
write/spell	2
translate	2
grammar	2
You find the problem and help me.	2
listening comprehension	1
less Hebrew	1
use dictionary	1
teacher works with individual student	1
during exams I would like the material to be read to me and extra time	1*

It was decided to combine the first two questions for the revised version: What are your difficulties in reading English?

d. REVISED VERSION

The revised version of the screening test appears in the appendix. The vocabulary list was shortened from 96 to 60 words to increase efficiency. Words were deleted which most of the students pronounced correctly or incorrectly on the grounds that such words did not differentiate between dyslexics and normal but weak students. Some errors were common to many students, not only dyslexics. The words that were kept were more sensitive to student variations.

e. IDENTIFICATION OF DYSLEXIC STUDENTS

The only two dyslexic students who had come with certificates identifying them as such were also identified by means of this screening test. One had both more errors

(vocabulary score of 52/96 (10 minutes), transliteration score of 4/12) and specific kinds of errors (inversion of letters, confusion between different vowels and consonants, syllables). Errors in the place names were Kiryat Dyalik and Binyamina (replacing "d" for "b"), Saba eliyau (replacing "b" for "d") Sgaram (replacing "g" for "f"), Ain Asopat (replacing "p" for "f" and "s" for "sh"), and Nachrat (replacing "ch" for "ts"). (See the Appendix for place names -- p. 15). The other manifested similar kinds of errors (reverses letters, misreads ends of words), the number of errors being similar to the rest of the group: vocabulary score = 61/96 in 9 minutes, transliteration score = 12/12 in 5 minutes). This student complained of tiredness after putting in a tremendous effort in performing the tasks whereas the other students reported feeling relaxed and fresh -- a pleasant break from the lesson.

Several other students were identified as having problems. One of them was approached by the teacher and felt relieved, having felt that reading had been difficult all along (Oh, so that's why ...). She was willing to be tested at one of the dyslexic centers -- in order to qualify for special test conditions (extra time, texts read on cassette, etc) until speaking to her parents. Worried that their daughter would have a spot on her college record by declaring herself dyslexic, they asked her not to go for the testing.

A few others were native speakers of Arabic and had answered the last section in Arabic. It was not clear whether their difficulty was dyslexia or placement in a course too difficult for them (ie, lack of English proficiency). It must also be remembered that for these students, English is a third language (Hebrew being the second). Finally, one student with extremely low results turned out to be a very bright student whose motivation in responding was very low. She answered all the questions extremely quickly but carelessly as it did not affect her mark.

Although most of the students found the text interesting and fun, the dyslexic students complained that it was difficult.

f. RECOMMENDATIONS

We believe that the screening test be used to identify problematic students have not been officially identified as dyslexic but whom the teacher suspects as having unusual difficulties (ie, not simply low English proficiency). A student scoring low on this test would then go for further testing at one of the recognized dyslexia centers. This test would be used for the benefit of both student and teacher in early identification of the problem since time extension or other facilitating conditions need to be noted at the beginning of the semester and not close to the final exam.

C. Suggestions for Remedial Materials

Criteria for remedial help in literature are given by Matejcek and Sturma (1986) and Kisbourne (1986). On empirical grounds, Matejcek and Sturma recommend both the training of auditory analysis and synthesis as well as visual perception (p. 209). Kisbourne recommends a list of procedures (p. 177):

1) Instruction is individual, to maintain the child's attention.
2) Potentially distracting stimulation is limited.
3) Learning materials are graduated in difficulty.
4) Learning materials contain no irrelevant features or decorations.
5) At each level of difficulty, the skill is learned to the point of fluency before the next level is attempted.
6) Within each level, additional units of information are phased in one by one. No new item is added unless response to existing items is totally correct.
7) Length of instruction is determined by needs of child, not of administrative (as long as gains are made, no longer than attention is maintained).
8) Learning is as 'nearly errorless' as possible. If the child makes an erroneous response, the form of questioning is changed lest the mistake become habitual.
9) Reinforcement is immediate and tangible.

Many of these principles were included in our remedial materials. Since these are suitable for adults and more complex in nature, the learning could not be totally errorless. Nevertheless, we aimed for as supportive a learning environment as possible.

"Since there is no single cause for all learning disorders, there is no single solution." (Bloom, 1990)

Various remedies may work for different types of dyslexic students. For some, removing pressure from students by giving them more time or allowing them to take breaks during a test is enough to improve their reading comprehension to that of normal readers. For others, texts magnified by 125% to 150% would be acceptable. Other techniques include physically highlighting lines of text, for example, by placing an orange-colored transparent sheet of plastic over them, or narrowing the margins of a text.

For students having difficulty with their sound-symbol correspondence, the language laboratory can be particularly useful. This correspondence is crucial in reading and can be focused in the language lab.

As a first step, we decided to experiment with the language laboratory by preparing a preliminary screening test to see whether dyslexic students pronounce words differently from other students. It should be mentioned at this point that our students are mainly native speakers of Hebrew or Arabic, and that they are learning English as a Foreign Language.

Following the screening test, we developed a 9-lesson module in the language laboratory focusing on the eye-ear relations of reading words aloud and comprehending texts in the same field of vocabulary -- in this case, the field of Education.

1. Pre-Test / Post-Test

Having ascertained that s/he is dyslexic, a student will start the remedial program in the language laboratory with a pre-test consisting of an intermediate level text with accompanying multiple-choice, true-false, short-answer, and reference questions (see Appendix). The student takes the same test at the end of the course, and the results are compared.

Additional work in the language lab consists of materials from the EFL course in which the student is currently enrolled. In our experience, the materials presented here are appropriate for dyslexic students on intermediate to advanced levels, and the additional materials, constituting another 10 hours in the language lab, round out the student's needs for the particular level of study.

2. 9-hour Mini-Course

Since overlap and repetition of vocabulary and ideas are necessary to enable students to make the sound-letter connections, texts should come from a single subject area. For our course, five paragraphs were chosen from the field of Education to appeal to a wide range of students.

Materials available for students in the language lab include a copy of the materials for a lesson, an accompanying tape with the lesson recorded, a dictionary, colored markers and writing materials. An answer key follows each session with explanations given when needed by the teacher-monitor.

For most texts, the student listens to the text and simultaneously reads it. Then the student checks word meanings of difficult words in the dictionary. After understanding the texts, the student repeats them into the microphone, first phrase by phrase, following the taped voice, and in following lessons, paragraph by paragraph.

Questions and exercises are secondary to the actual reading silently and aloud. Their functions are to check comprehension and to provide an accompanying activity while the student takes time to reread the texts. Because there is a danger that students may memorize these short texts, they appear in a different order in each lesson.

After each lesson, the teacher-monitor goes over the key with each student. This is one of the most valuable parts of the lesson, and students see this as private tutoring.

IV. Conclusions and Implications for Further Research

Student response to this program has been overwhelmingly positive. Appreciating the one-to-one attention by the teacher-monitor and the efforts made on the part of the university to meet their needs, students attend the sessions willingly. During the lab sessions, most students usually discover new sight-sound connections which help them become better readers.

During the same semester that they attend sessions in the language lab, students are enrolled in their regular EFL courses. After completing the lab sessions, students and teachers report improved classroom performance as well as a more positive attitude toward language learning.

Although the program was designed for students on the Advanced 1 level, we have found it also useful for students both a semester below and a semester above, that is, Pre-Advanced, Advanced 1, and Advanced 2 (which is our exit or exemption level course). At the end of the EFL program, students are expected to read academic texts with reasonable fluency and comprehension.

For lower level students, we would like to write new materials using the same principles on easier texts. This would be an interesting project for the future. We would welcome any materials writers on dyslexia who would like to participate in this project with us.

The positive reception to our materials apparently filled a need for our dyslexic students. We have found that the written materials must be accompanied by a feedback session with a tutor for the lessons to be effective. We would like to continue this experimental method of teaching and self-access supplementary work, expanding it to texts in other content areas. We therefore recommend this program to other institutions with similar language learning needs. We would be pleased to share our materials and receive feedback in addition to experimenting with other ideas.

ACKNOWLEDGEMENTS

Project Team: writing and revising of testing and remedial materials

Dr. Marsha Bensoussan, Dr. Eleanor Avinor, Joyce Livingstone, Ruth Auerbach, Olga Bogdanov, Marian Bunzl, Lilian Cohen, Sonia Danziger, Johanna Katzenelson, Kari Smith

We would like to Oren Lamm for helping us design the materials and contributing his knowledge and experience to this project.

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APPENDIX

LANGUAGE LABORATORY

SCREENING/PLACEMENT TEST FOR DYSLEXIC STUDENTS

Please time yourself. Write down what the time is now: _____

1. Read the following groups of words into the microphone.

GROUP 1	dab	GROUP 4	drab
	won		pupil
	nim		clate
	raw		agile
	deb		sleep
	saw		quick
	nip		peels
	now		freep
GROUP 2	ame	GROUP 5	table
	war		begin
	bad		drave
	pin		sugar
	ale		trees
	ped		splish
	brag		weight
	mane		forest
GROUP 3	garb	GROUP 6	flimsy
	less		refort
	clim		squish
	type		height
	grag		caught
	fand		expert
	bird		squirt
	sign		through

GROUP 7	fanning
	ceiling
	abverse
	deliver
	foreign
	precise

GROUP 8	stressed
	scribble
	forgiving
	meliflave
	superseded
	discrimination

Look at your watch. What time is it? _____

Please time yourself. Write down what the time is now: _____

2. Write these place names in English.

Israel
Kiryat Bialik
Benyamina
Ra'anana
Ma'agan Michael
Shefar'am
Sde Eliahu
Ain Hashofet
Kinneret
Nazareth

Look at your watch. What time is it? _____

3. READING COMPREHENSION TEST

Please time yourself. Write down what the time is now:

_____

Read the text and answer the questions following it.

What Speeds Should be Expected?

Since it is obviously much more difficult for the foreign language student to improve his reading speed than for a native speaking reader, and much riskier, you may wonder whether it is advisable to attempt it.

The days have passed when people were prepared to accept uncritically claims of reading speeds of several thousand words a minute. Such speeds must be seen as extreme forms of scanning rather than reading proper. They are useful for people burdened with masses of documents, but not for study purposes nor for recreational reading: who would want to finish a good novel in twenty minutes?

It is right to be healthily sceptical, but we should not reject the idea of improving reading speed just because exaggerated claims are sometimes made. Foreign language students can usually make and maintain significant improvements in their reading speed once they understand that it is useful and possible to do so. Progress may

be particularly striking and satisfying where initial speeds are very low, as they often are in students from countries with a strong tradition of reading aloud.

Secondary school pupils in countries where English is a second language may read at 120-150 words a minute before training. University students in similar areas may read at about 200 words per minute but have been found to study at a rate of as little as 60 words per minute (presumably the texts were difficult and had to be understood thoroughly). University students in countries where there is little tradition of reading have been found to read at as little as 40 words per minute even in their native language. All these students can make very significant advances in speed after training; doubling the rate is not uncommon. An average increase would be about 50 per cent.

from Teaching Reading Skills in a Foreign Language (1982)
by Christine Nuttall
London: Heinemann Educational Books.

I. COMPREHENSION QUESTIONS

A. MULTIPLE-CHOICE QUESTIONS Circle the best answer.

1. "Since" (line 1) means:

   a. because
   b. from then till now
   c. yet
   d. however

2. In this text, foreign language students (lines 1-2) are students who

   a. come from a foreign country
   b. learn about foreigners
   c. study in a foreign language
   d. speak strange languages

3. According to the text, we should be "healthily sceptical" about

   a. methods for improving reading speed
   b. scanning in reading
   c. foreign language students' ability to improve
   d. claims that people can read especially fast

4. "once" (line 15) means:

   a. one time
   b. after
   c. long ago
   d. if

5. In the last paragraph, the writer mentions secondary school pupils and university students to show that

   a. secondary school pupils read more quickly
   b. university texts are more difficult
   c. people can be taught to read faster
   d. in some countries, people read little

6. In general, the writer's attitude to training in speed reading is:

   a. positive
   b. negative
   c. indifferent
   d. not clear

B. TRUE/FALSE STATEMENTS

Indicate whether the following statements are true or false. Explain your answer from the text.

____ 1. It is dangerous to increase foreign students' reading speeds.

line(s) _____

____ 2. Reading thousands of words a minute is not really reading.

line(s) _____

____ 3. The writer believes it is useful to read several thousand words a minute for study purposes.

line(s) _____

____ 4. If a reader's speed is low to being with, he won't show much improvement even with training.

line(s) _____

____ 5. Reading aloud makes speedy reading difficult.

line(s) _____

____ 6. Not all students can improve reading speed with the help of training.

line(s) _____

____ 7. The writer states that different types of reading need different speeds.

line(s) _____ _____

C. SHORT ANSWER QUESTION

The three different types of readers mentioned in paragraph 4 are:

1) _____

2) _____

3) _____

II. REFERENCE

To which words in the text do the following words refer?

	word	line	words in text
1.	you	3	_____
2.	it	4	_____
3.	do so	16	_____

Look at your watch. What time is it? _____

4. Answer the following questions either by writing on the test paper or by speaking into the microphone.

   You may write in English or Hebrew.

   a. What are your difficulties in reading English?

   b. How have you helped yourself?

   c. How would you like us to help you?

ANSWER KEY

20 questions, 20x5 points = 100%

I. COMPREHENSION QUESTIONS

A. MULTIPLE-CHOICE QUESTIONS

1 - a	word meaning
2 - c	comprehension
3 - d	comprehension
4 - b	word meaning
5 - c	idea/example
6 - a	writer's intent

B. TRUE/FALSE STATEMENTS

1 - False	paragraph 1, lines 1-4
2 - True	paragraph 2, lines 7-8
3 - False	paragraph 2, line 9
4 - False	paragraph 3, lines 16-18
5 - True	paragraph 3, lines 18-19
6 - False	paragraph 4, lines 28-29
7 - True	paragraph 2, lines 7-11; paragraph 4, 22-25

C. SHORT ANSWER QUESTION

1 - secondary school pupils in countries where English is a second language
2 - university students in countries where English is a second language
3 - university students in countries where there is little tradition of reading

II. REFERENCE

1 - the reader
2 - improve reading speed
3 - make and maintain improvements in reading speed

LANGUAGE LABORATORY

MINI-COURSE FOR DYSLEXIC STUDENTS

needed:
1. 3 paragraphs in one subject: Education
2. tapes -- language lab
3. dictionary (monolingual, bilingual, electronic, etc.)
4. teacher -- monitor
5. 9 sessions -- an hour each session
6. answer keys
7. colored markers

Text 1: example of exercises

LESSON 1: TEXT 1 (sample lesson)
LESSON 2: TEXT 2 and TEXT 3
LESSON 3: TEXT 4 and TEXT 5

a. LISTENING AND SPEAKING

1) Student listens to text.
2) Student uses dictionary to find meanings of difficult words
3) chunks of reading -- teacher reads chunk
student repeats chunk
teacher repeats chunk

b. READING

1) student locates words before/after other words in text
2) student colors in key words needed to understand what text is about

c. VOCABULARY TEST

d. SUMMARY

e. FEEDBACK to student

LESSON 4: all 5 texts

a. LISTENING AND SPEAKING

student reads Texts 1 - 5 (DIFFERENT ORDER)

b. Match the appropriate TITLE on all 5 texts
(information found in colored sections)

c. general COMPREHENSION across five texts:
TRUE/FALSE questions

d. FEEDBACK to student

LESSON 5: all 5 texts (change order)

a. LISTENING AND SPEAKING

student reads Texts 1 - 5 (DIFFERENT ORDER)

b. student colors MARKERS AND CONNECTING WORDS
(different color from main idea)

c. identify and mark:

1) addition (one idea adds to another idea)
2) contrast (or mistaken idea / correction)
3) result / conclusion

d. general comprehension questions -- focusing on
relations between ideas

e. FEEDBACK to student

LESSON 6: TEXT 1 and TEXT 2

a. student reads Texts 1 and 2
b. comprehension questions
c. word meaning questions
d. reference questions
e. student receives feedback

LESSON 7: TEXTS 3 - 5

a. student reads Texts 3 - 5 (DIFFERENT ORDER)
b. word meaning questions
c. reference questions
d. comprehension questions
e. student receives feedback

LESSON 8: TEXT 6

Post-Test: text + questions
(Pre-Test given during screening at beginning of semester)

student receives feedback

LESSON 9: GENERAL DISCUSSION

sharing of experiences on test and during English lessons

possibility of setting up ongoing support group during the semester with some or all of the participants and the teacher in the language lab